Changes in Physicochemical and Microbial Properties of Sweet Oranges from Harvest to Spoilage

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ABSTRACT

Freshly harvested sweet oranges were stored at ambient condition (R.H: 72-83%; Temperature: 26-29^{0}C) without any treatment and different Physico-chemical and microbial properties were studied during September, 2012-13 at Post Harvest Technology Centre, Agriculture college campus, Bapatla until quality deterioration was observed. Physiological Loss of Weight (PLW) increased gradually during the storage period. Average fruit weight decreased from 154.50 to 132.05g. Juice content of the fruit has been decreased from 46.28 to 34.38%. Firmness has been found declining initially up to 17 days, later it increased slightly due to desiccation resulting in drying or toughening of peel. Total Soluble Solids (TSS) has been increased from 7.50 to 9.24%. Reducing sugars increased from 1.22 to 2.32 %. Ascorbic acid content, total acidity, phenol content were found decreasing. Ascorbic acid content has been decreased from 38.55 to 27.42 mg/100g. Phenol content in juice has been increased from 16.49 to 17.43 mg/100g. Acidity has been decreased from 0.91 to 0.53 %. The surface microbial load showed a gradual raise in number of colonies during the storage period. Findings indicated that sweet oranges can be stored at ambient condition without any treatment up to 3 weeks with a minor loss of quality.

Key words : Ascorbic acid content, Phenol content, Reducing sugars, Sweet Orange, Storage, Surface microbial load, Titrable acidity.